VARIABLE-BANDWIDTH DENSITY-BASED FUSION

Abstract of the Disclosure

A fusion estimator is determined as the location of the most significant mode of a density function, which takes into account the uncertainty of the estimates to be fused. A mode detection method relies on mode tracking across scales. The fusion estimator is consistent and conservative, while handling naturally outliers in the data and multiple source models. The new estimator is applied for multiple motion estimation. Numerous experiments validate the theory and provide very competitive results. Other applications include generic distributed fusion, robot localization, motion tracking, registration of medical data, fusion for automotive tasks.